BOSE INSTITUTE KOLKATA

Tender No.	BI/T/04/2017-18
Date	21.12.2017

Title	**Procurement of (i) NAT-PM-AC600 (ii) NAT-MCH-Base12-GbE & (iii) NAT-JSM-00**
Specifications	ATTACHED IN ANNEXURE

Last Date & Time for submission	**10.01.2018 upto 1:00 p.m.**
Date & Time for opening EOI	**10.01.2018 at 1:30 p.m.**
Submission of Tender(address)	TENDER BOX, PURCHASE SECTION, BOSE INSTITUTE, CENTENARY CAMPUS, ANNEXE BLOCK 1ST FLOOR, P-1/12 CIT SCHEME VIIM KOLKATA 700054
Venue of opening	Purchase Section, Bose Institute, Centenary Campus, KOLKATA 54
For any query the interested agencies / firms may contact (Dept./Section/Div./Unit)	033 2569 3208 / 3305

General Terms & Conditions

Any other information (if applicable)	PLEASE REFER TO THE ANNEXURE FOR DETAILED GUIDELINES & INFORMATION

Name of Tender No. should be mentioned on the envelope positively.
Director, Bose Institute reserves the right to accept or reject any or all proposals either in part or in full. The reasons for rejecting the tender of a prospective bidders will be disclosed only when enquiries are made.

Sr. Professor & Incharge, Registrar's Office

ANNEXURE

NAT-PM-AC600

The NAT-PM-AC600 is a high-density and high-efficiency power module (PM) for MicroTCA™ applications. Supplying 600W it is the market's most efficient PM in its single-width full-size form-factor to run today's complex communication systems made of latest processor generations and an increased number of Advanced Mezzanine Cards (AMC™). The NAT-PM-AC600 provides electrical support for the expected workload of 12 AMCs, 2 Cooling Units (CUs) and 2 MicroTCA™ Carrier Hubs (MCH).

EMMC

The NAT-PM-AC60 includes a robust Enhanced Module Management Controller (EMMC) that interfaces the power control functionality via the Intelligent Platform Management Bus (IPMB) to the MCH.

Redundancy and Load Sharing

The NAT-PM-AC600 supports redundancy as well as load sharing modes in accordance with the MicroTCA™ specifications. In case of an input power supply failure the power for the onboard EMMC can be provided by SMP power from other PMs, so that the MCH is able to analyse root cause failure.

LED indicators

Besides the standard indicator LEDs for hot-swap, failure and heart-beat, at its front panel the NAT-PM-AC600 provides a unique light bar indicator, showing the PM's total power load on a 0-100% scale in steps of 10% in real-time.

Applications

The NAT-PM-AC600 is a hot-swappable, fully redundant and highly efficient AC/DC power module. The module's single-width design offers perfect thermal performance and therefore is ideally suited for all air-cooled MicroTCA™ solutions. The NAT-PM-AC600 is fully compatible with any standard compliant FRU being insertable into a MicroTCA™ chassis. The NAT-PM-AC600 could easily serve applications like

- commercial and military (tele-) communications
- automated test equipment
- medical
- video
- security
- industrial machine control
- clustered computing architectures

For N.A.T., the NAT-PM-AC600 is a further and consequent milestone in developing a broad and harmonized MicroTCA™ eco system. The PM serves as a central power converting and conditioning control block for entire sub-racks. N.A.T. offers sophisticated and standard compliant MicroTCA™ systems, either as turn-key solutions or building blocks. This offer is complemented by a large variety of own MCHs,

telecom line interface and network processor cards, PrAMCs, I/O cards, chassis, CUs and PMs.

Family of MicroTCA power modules

The NAT-PM-AC600 is a member of the NAT-PM family of MicroTCA power modules which consists of:

NAT-MCH-Base12-GbE

The NAT-MCH is the powerful management and data switching entity for all MicroTCA.0 systems:

- management for
  - 12 AMCs + optional AMC13 in 2nd MCH slot
  - 4 power modules including N+1 redundancy
  - update channel to secondary MCH

- GigaBit Ethernet switching (Fabric A)

- optional PCI Express (Gen 3) switching (Fabrics D-G)

- optional SRIO (Gen 2) switching (Fabrics D-G)

- optional 10GbE (XAUI) switching (Fabrics D-G)

- front panel uplinks
  - 2x 1GbE (load sharing supported)
  - optional two CX-4 (SRIO and XAUI) or two SFP+ (XAUI) uplinks
  - 2x SMA for external CLK support (bi-directional)
  - USB console

- clock generation and distribution by sophisticated clock module NAT-MCH-CLK

- configuration options
  - sconsole (USB, RS232 or Telnet)
  - script File
  - web Browser

- host based Java GUI for any operating system capable of executing Oracle Java Run-Time Environment (JRE) v1.7 or higher, i.e. Linux, Mac OS-X or Windows

NAT-JSM-00

- JTAG download via MCH through Ethernet
- JTAG programming connector at front panel
- Automatic arbitration between JTAG Masters
- Target selection through JTAG information
- Overrule of automatic operation and dedicated selection of JTAG target by front panel elements
- Multiple JSM pinout configurations via FPGA

Physical Dimemsions

- Single-width AMC module: width 73.5 mm (2.89 in), depth: 180.6 mm (7.11 in)

Subsystem Processor

- Altera Cyclone® III FPGA

Interface: Backplane

- TCP/IP: Protocol as used by the Xilinx Vivado or ISE design suites supports the XVC protocol, which allows JTAG commands to pass over IP to an embedded system so that a target Xilinx FPGA can be programmed and/or debugged. The NAT-MCH parses the IP packets with a TCP/IP connection and converts the packets into JTAG commands. After the packets are processed, the NAT-MCH communicates with the NAT-JSM over an internal protocol. The NAT-JSM switches the connection to the target device and provides logical connection between the XVC server and the target FPGA.

Interfaces: Front panel

- JTAG Header: The NAT-JSM provides a XILINX compatible 14-pin programming header on the front panel. With a standard XILINX programming adapter, you can program or debug the resources in a MTCA system. The Interface has been tested successfully with the Xilinx Platform Cable USB II. You select the programming target using the rotary switch on the front panel or through the web interface of the NAT-MCH.
- Mini USB: A mini USB connector on the front panel provides a direct connection to the on-board USB-to-JTAG bridge for common programming adapters from various vendors. To use this programming interface, the software driver of the respective tool should support programming interfaces based on the FTDI FT2232 USB-to-JTAG chip. The interface has been tested successfully with Lattice Diamond Programmer 3.0. You select the programming target using the rotary switch on the front panel or through the web interface of the NAT-MCH.

Environmental Conditions

- Temperature (operating): 0ºC to +50ºC with forced air cooling
- Temperature (storage):-40ºC to +85ºC
- Relative Humidity:10% to 90% at +55ºC (non-condensing)

Power Consumption

Power is to be supplied through the backplane connector, the onboard power converter has a range from +5V to +12V. Current draw is not more than 200mA.

Standard Compliance

- µTCA.0 Revision 1